

# Briefing on Regional ITS & RCN Project Status

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## **RTP: Expansion of ITS in the Future**

- **Freeway ITS - \$ 143 million (for 20 yrs) for expansion of the FMS – will give 85 percent coverage of the urban freeway system**
- **Arterial ITS - \$ 50 million (for 10 yrs thru' 2018) Integrated Arterial-Freeway Corridors**

## Freeway ITS Expansion

- **More miles of FMS coverage – new freeways**
- **Adaptive ramp metering – 2009 field test on I-10**
- **Real-time travel time advisories – on 12 signs**
- **Freeway Service Patrol expansion**
- **Access to DPS/police CAD information -- completed in 2007**

## Arterial ITS Expansion

- **Expand traffic surveillance via cameras and sensors**
- **Better integration with freeway operations**
- **Quick response to crashes and other blockages**
- **Transit signal priority – will follow LRT predictive priority scheme**
- **More real-time adjustments to traffic signals – reduced delay**

# Telecommunications for ITS

- **Goal: Regional Community Network (RCN)**  
– a fiber backbone primarily to support ITS functions
- **ADOT TOC to serve as the regional hub**
- **Individual cities and towns are building fiber backbones linked to the FMS backbone**
- **Infrastructure and resource sharing**

# RCN Regional Hub Connections

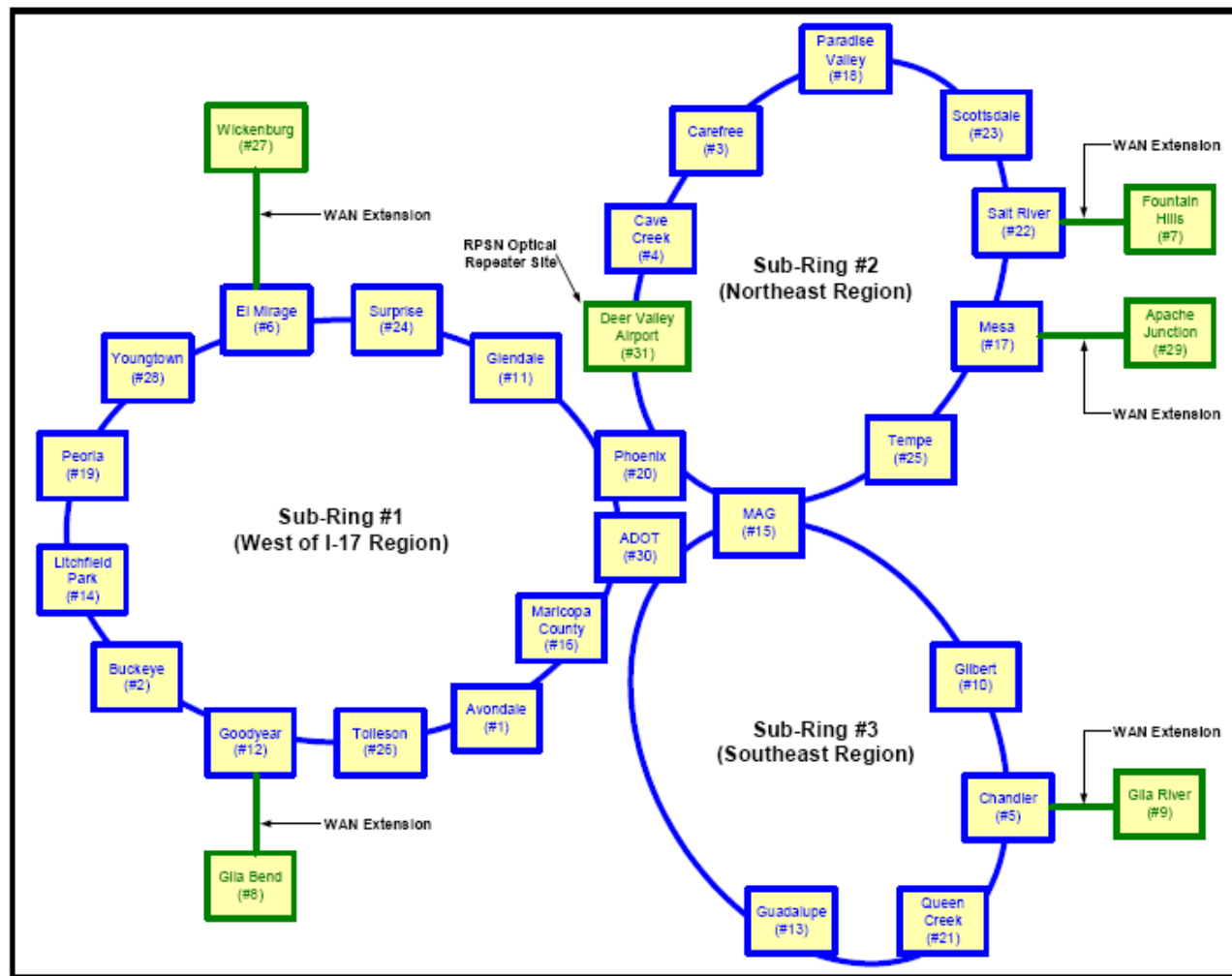
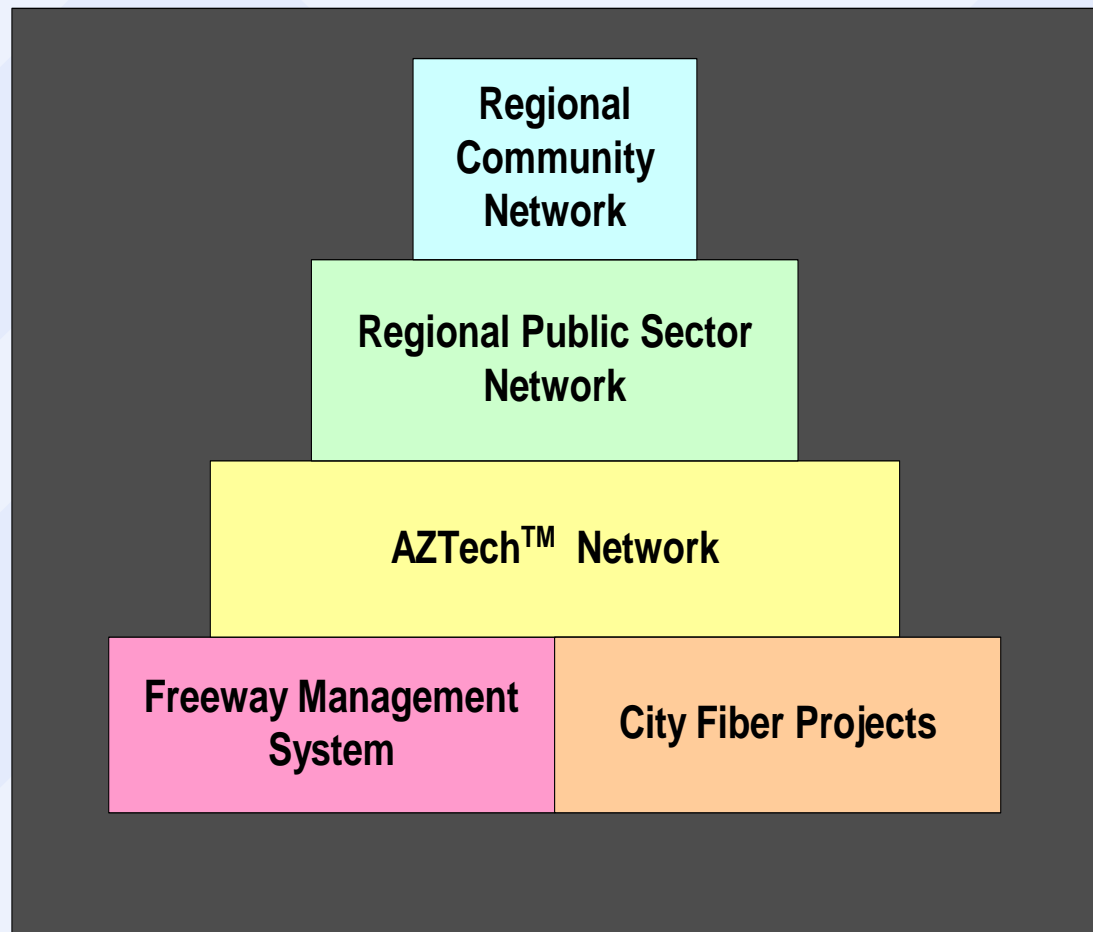


Figure 5: Recommended Regional Hub Connections

# Basic Framework for RCN

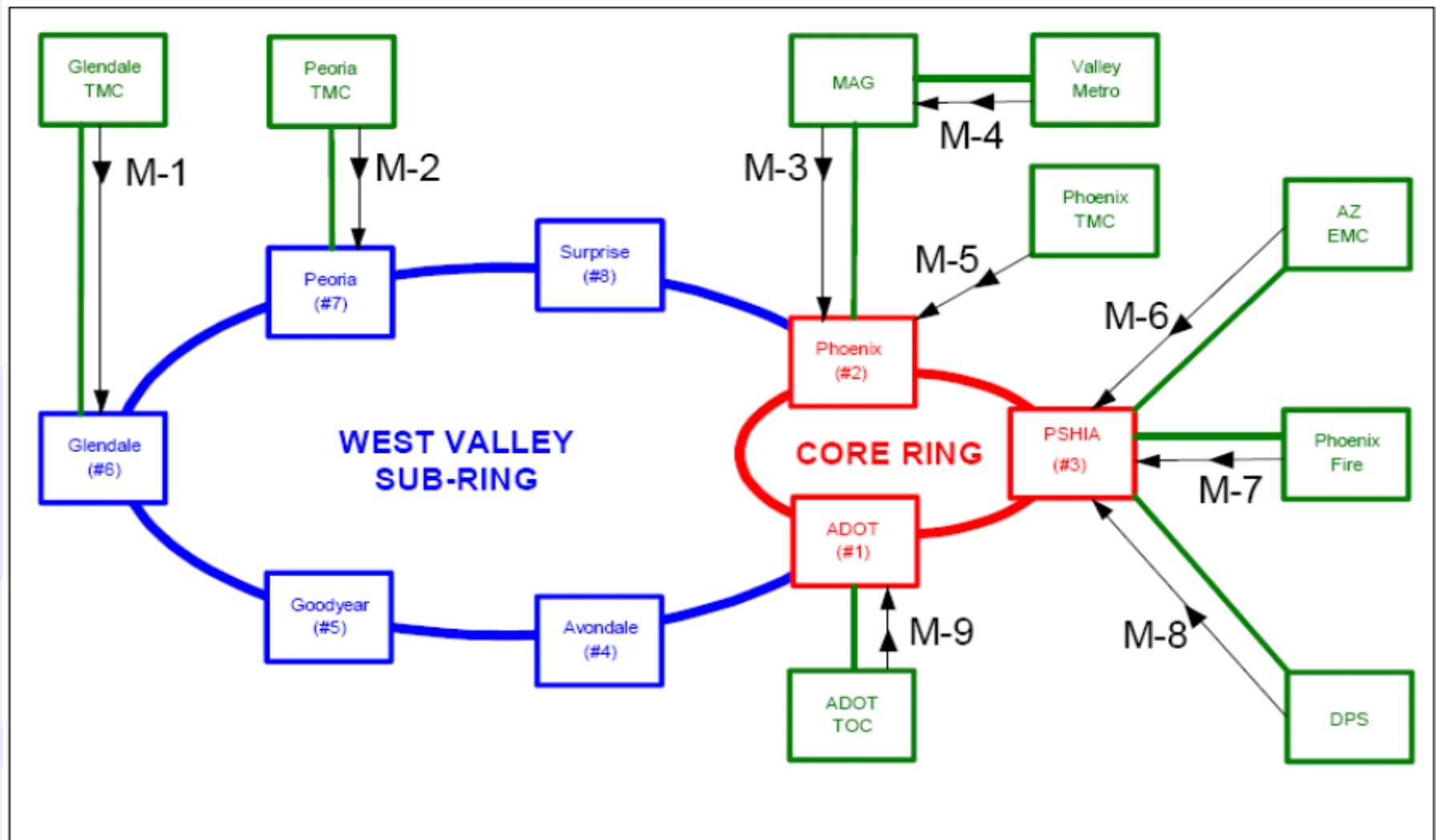


## **RCN Implementation Status**

- **Using a federal grant ADOT has completed designing an Initial Deployment of RCN – Phase 1A -- a subset of Sub-Ring#1**
- **MAG CMAQ \$1.6m has been programmed to implement Phase 1A**
- **Federal requirement -- Systems Engineering Analysis (SEA) for all ITS projects**

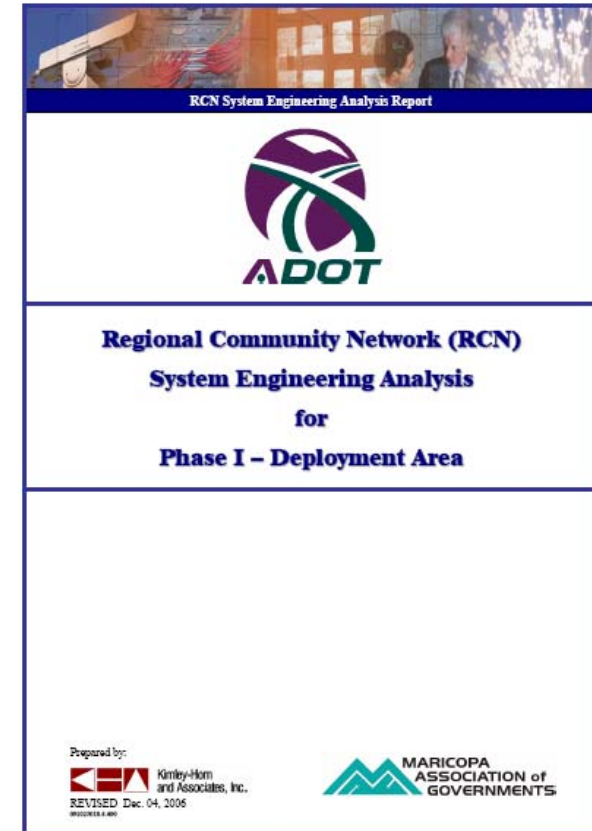


# RCN Phase 1A Connectivity



# RCN Systems Engineering Analysis

- SEA for RCN was completed in Dec 2006
- SEA recommended:  
An RCN Working Group  
for regional oversight to  
RCN expansion and  
management



## **RCN Operation & Maintenance**

- **Initially, operation & maintenance of RCN conduit & fiber will be the responsibility of participating agencies – as defined in JPAs**
- **As RCN grows a more comprehensive O&M plan may need to be developed by MAG ITS, MAG TAG with guidance from the RCN Working Group**

***Ref: RCN SEA Ch 8. System Ops & Maint.***

## **RCN Implementation Status (contd)**

- **PS&Es for RCN Phase 1A fiber & conduit pull boxes etc. have been completed by ADOT and the project is expected to go to bid shortly**
- **RCN Phase 1A Active Electronics will be bid separately later in 2008**

# Long Term Planning for Regional ITS Communications

- A MAG project to develop an ITS Communications Plan  
By Dr. Bruce Abernethy – a national expert on ITS Communications
- Assessed future comm needs and recommended a path for the future
- Draft Plan not finalized due to concerns about possible incompatibility with on-going work
- Need identified for a Regional ITS Communications Workshop to help resolve differences and chart a new course

## Draft Plan Recommendations

- Use ADOT FMS fiber backbone for Regional ITS communications network-ring architecture
- Use available ADOT single mode fiber
- Use ONLY Simple WDM to avoid wavelength problems between 1310 and 1550 nm on old FMS fiber not meant for "all wave communications"
- Load analysis indicates 10 GB Optical Ethernet is required to meet long term regional ITS comm needs

## Draft Plan Recommendations (contd)

- **Architecture recommended:**
  - Stand-alone regional ITS comm network
  - Jurisdictional networks as peer subnets
  - Gateways to regional network provided by Ethernet switches/routers
- **Deployment can be linked to FMS expansion schedule**
- **ADOT to maintain RCN fiber, local agencies to maintain their networks**
- **A network equipment manufacturer for monitoring and maintaining Node Equipment for \$250k/yr**

## Next Steps

- **Establish the RCN Working Group consisting of members from ITS Committee & MAG TAG**
- **Hold the first meeting possibly on April 1<sup>st</sup> 9 am – prior to the 10 a.m. ITS Committee mtg**
- **Hold a one-day workshop on ITS Communications that would:**
  - Generate consensus on regional direction for RCN
  - Generate consensus on active electronics for Phase 1A which might become the defacto standard for RCN



## Upcoming Meetings

- **ADOT (KHA) is planning hold a meeting to discuss RCN Phase 1A Active Electronics with all affected agencies – THIS IS NOT A MEETING OF THE RCN WORKING GROUP**
- **ITS Communications Workshop – May 14<sup>th</sup> or 15<sup>th</sup> – *The agenda will be developed in consultation with RCN WG. MAGTAG members will be invited to participate. Pl let Audrey know if you are interested in participating.***

# Questions? Comments?

